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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/550,443	04/17/2000	Gordon Pack	081862.P174	1576
7590	12/27/2005		EXAMINER FERRIS, DERRICK W	
Sanjee K Dutta Blakely Sokoloff Taylor & Zafman LLP 12400 Wilshire Blvd Seventh Floor Los Angeles, CA 90025-1026			ART UNIT	PAPER NUMBER
			2663	
			DATE MAILED: 12/27/2005	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/550,443

Applicant(s)

PACK ET AL.

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-15 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-15,18-22 and 24 is/are rejected.
- 7) ☒ Claim(s) 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/7/2005 has been entered.

Response to Amendment

2. **Claims 1, 3, and 5-15, 18-24** as amended are still in consideration for this application. Applicant as amended claims 1, 6, 7, and 11. Applicant has added claims 18-24.

3. Examiner **withdraws** the obviousness rejection to *Hoeneke* in view of *Thorne* (and corresponding rejections) for Office action filed **05/05/2005**. In particular, the rejection is withdrawn based on applicant's claim amendment to priority queues and not necessarily the further teachings of *Hoeneke* at e.g., column 3, lines 10-36 as pointed out by applicant with respect to fairness scheduling. In particular, it is important to note that applicant's further limitation with respect to first and second queues cells have *no recited relationship* to a second bandwidth (i.e., the claim(s) simply recite priority queuing) except for claim 6. Thus applicant's arguments with respect to servicing the priority queues using a second bandwidth are not persuasive. As such, please find new rejection(s) as necessitated by amendment. Although art used in the new rejections was previously cited on applicant's IDS, the following rejection is made non-final.

Claim Rejections - 35 USC § 112

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4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 18-19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **Claim 18** is rejected for lacking antecedent basis with respect to a quality of service controller which was removed in the parent claim by applicant's amendment (claim 18 should probably depend on claim 20, see e.g., claim 7). **Claim 19** is rejected since it depends on claim 18.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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7. **Claims 6-8 and 22** are rejected under 35 U.S.C. 102(e) as being U.S. Patent No. 6,526,060 B1 by *Hughes et al.* (“*Hughes*”).

As to **claim 6**, see figure 7 of *Hughes* where a first bandwidth is taught as compute target rate 710 and second bandwidth is taught as compute observed arrival rate 720. In particular, detecting a change from a first bandwidth to a second bandwidth of a communication channel is taught based on the observed arrival rate 720. Specifically, the parameters used to determine the target rate 710 and the observed arrival rate 720 are taken from the Qbins which reflect the connection queues, see e.g., figure 4. Thus the bandwidth is taken with respect to a communication channel including a plurality of lines since each (virtual) connection is a line. Calculating the second bandwidth is taught as step 720. Providing the second bandwidth via a feedback loop to a transmission rate selector is taught as part of determining the fair weight with respect to a *weighted* approach, see e.g., column 10, lines 1-15. In particular, VC queues are serviced in a round-robin fashion according to the produce of the computed fair rate and the VC weight. Thus the further step of selecting a first and second queued cells for transmission based upon an associated transmission priority, wherein the first queued cells have a higher transmission priority then the second cells is taught based on at least the weight of the queue. In addition, the second bandwidth is provided using a feedback loop since the determine fair rate 730 uses the input of the computed observed arrival rate 720 and the compute target rate 710. Also note that each VC queue corresponds to a class of service (i.e., priority), see e.g., column 6, lines 36-55.

As to **claim 7**, the second bandwidth is provided using a feedback loop since the determine fair rate 730 uses the input of the computed observed arrival rate 720 and the compute target rate 710.

As to **claim 8**, each VC queue corresponds to a class of service (i.e., priority), see e.g., column 6, lines 36-55.

As to **claim 22**, the VC queues are serviced based on weight.

8. **Claims 1, 3, 5-8, 11-13, 18, 20 and 22** are rejected under 35 U.S.C. 102(e) as being U.S. Patent No. 5,313,454 A by *Bustini et al.* ("*Bustini*").

As to **claim 1**, see e.g., figure 7 of *Bustini* with respect to congestion avoidance feedback. In particular, detecting a change from a first bandwidth to a second bandwidth of a communication channel, the communication channel including a plurality of lines is taught as part of the ICA rate control feedback 180. Specifically, if congestion is detected (i.e., a change in bandwidth), a notification message is sent from the detecting node (e.g., node C) to the originating node (e.g., node A) on the return virtual circuit. In addition, note that the virtual circuits are transmitted on e.g., a T1 line thus teaching the communication channel including a plurality of lines (i.e., the lines are the virtual connections or DS-0s), see e.g., column 6, lines 49-65. With respect to the further limitations calculating the second bandwidth and providing the second bandwidth via a feedback loop to a transmission rate selector, see e.g., figure 8 with respect to the credit manager 809 and rate controller 811. In particular, the rate controller 811 receives a rate adjustment command from the remote FRP (e.g., node C in figure 7). From the rate control command the bandwidth is adjusted thus teaching calculating the second

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bandwidth and providing the second bandwidth via a feedback loop to a transmission rate selector. With respect to selecting a first and second queued cell for transmission based upon an associate transmission priority, wherein the first queued cells have a higher transmission priority than the second queued cells, see e.g., the segmenter 805 in figure 8 where the VC queues are served based on order (i.e., priority), see e.g., column 12, lines 23-47. In addition, output port transmit queues 819 and queues 135 for the TXR are further serviced by priority.

As to **claim 3**, QoS is taught with respect to the VC queues 803, segmenter 805, port transmit queues 819, and queues 135. Also see e.g., column 6, lines 26-45 and columns 18-19 with respect to priority. Examiners note a reasonable but broad interpretation of quality of service and priority in view of applicant's specification.

As to **claim 5**, see similar reasoning for claim 3.

As to **claim 6**, see similar reasoning for claim 1.

As to **claim 7**, see e.g., column 12, lines 49-65 with respect to adjusting the rates.

As to **claim 8**, quality of service is maintained by the queues, see e.g., similar rejection to claim 3.

As to **claim 22**, the quality service controller could be e.g., the credit manager 809 or the rate controller 811 which compensates for the change between the first and second bandwidth.

As to **claim 11**, see similar rejection to claim 1.

As to **claim 12**, see similar rejection to claim 7.

As to **claim 13**, see similar rejection to claim 8.

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As to **claim 18**, see similar rejection to claim 7.

As to **claim 20**, see similar rejection to claim 7.

As to **claim 22**, see similar rejection to claim 7.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1, 3, 5, 11-13, 18, 20, 21, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,898,670 A to *Hoebeke et al.* ("*Hoebeke*") in view of U.S. Patent No. 6,526,060 B1 by *Hughes et al.* ("*Hughes*")

In making a proper obviousness rejection under MPEP 706.02(j), the examiner will address the following four steps:

- a) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line numbers where appropriate;*
- b) the difference of differences in the claim(s) over the applied cited references;*
- c) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter; and*
- d) an explanation why one skilled in the art at the time of the invention was made would have been motivated to make the proposed modification.*

As such to **claim 1**, for step (a) *Hoebeke* discloses detecting a change from a first bandwidth connection to a second bandwidth connection by monitoring DMAX. As various source inputs are multiplexed over a common channel, examiner notes a plurality of lines in light of applicant's specification, see e.g., column 4, lines 37-67. With respect

to calculating the second bandwidth connection based on how many plurality of lines are broken, see e.g., column 6, lines 20-31. In particular, MMU monitors the output flow and is thus aware of potential changes such as broken lines since the bandwidth changes (i.e., examiner interprets broken lines as the available bandwidth (BW A) in view of applicant's specification, see e.g., applicant's specification at page 8, lines 5-15). In other words, applicant teaches monitoring the available bandwidth and not necessarily the actual number of lines, working or broken. Providing a second bandwidth via a feedback loop to a transmit rate selector is taught as part of signal OFRI. Each ISD is responsible for computing bandwidth transmissions. As such, each ISN has an associated queue in reference to queuing data cells.

For step (b) *Hoebeke* is silent or deficient to the further limitation selecting first and second queued cells for transmission based upon an associated transmission priority, wherein the first queued cells have a higher transmission priority than the second queued cells. In particular, although ABR is disclosed in the embodiment, see e.g., column 3, lines 55-60, other classes of service are used, see e.g., column 6, line 63-column 7, line 8. Thus *Hoebeke* also discloses VBR or variable transmission rates, however, *Hoebeke* does not expressly teach how other services are implemented including priority.

Hughes teaches the further recited limitation above at e.g., column 5, lines 35-50 and column 6, lines 37-55.

For step (c), the proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Hoebeke* by including CBR traffic or fixed transmission rates.

In order to establish a prima facie case of obviousness for step (d), three basic criteria must be met. The three criteria according to MPEP 706.02(j) are as follows:

First there must be some suggestion or modification, either in the reference(s) themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

As such, for step (d) examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the further limitation fixed and variable transmission rates. In particular, the motivation for modifying the reference or to combine the reference teachings would be to offer different classes of services. In particular, *Hughes* cures the above-cited deficiency by providing a motivation found at column 5, lines 35-50 and column 6, lines 37-55. Second, there would be a reasonable expectation of success since either fairness or weighted fairness queuing can be used. Thus the references either in singular or in combination teach the above claim limitation(s).

As to **claim 3**, QoS is maintained dynamically, see e.g., column 6, lines 20-36 of *Hoebeke*.

As to **claim 5**, QoS is preserved as part of class of service, see e.g., column 7, lines 1-6 of *Hoebeke*.

As to **claims 11-12**, see similar rejection to claim 1. In addition, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to incorporate the hardware and software proposed by *Hoebeke* into computer instructions as part of a design decision.

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As to **claim 13**, see similar rejection to claim 2.

As to **claim 18**, see similar rejection to claim 1.

As to **claim 20**, see the MMU as taught by *Hoebeke*.

As to **claim 21**, see e.g., column 6, lines 20-31w *Hoebeke* with respect to the number of active and broken lines.

As to **claim 24**, see similar rejection to claim 21.

11. **Claims 14, 15, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,898,670 A to *Hoebeke et al.* ("*Hoebeke*") in view of U.S. Patent No. 6,526,060 B1 by *Hughes et al.* ("*Hughes*") in further view of "ATM Technology Overview" to *Thorne*.

As to **claim 14**, *Hoebeke* teaches other types of priority but does not specifically teach fixed cells or CBR, see e.g., column 7, lines 1-6. *Hughes* also at e.g., column 5, lines 35-50 and column 6, lines 37-55 teaches quality of service but may not explicitly teach fixed cells or CBR.

Thorne teaches the above limitation at e.g., Section 2.3.6 on page 1/3.

Thus the examiner proposes to modify *Hoebeke* and *Hughes* to further clarify that QoS with respect to the queues further includes first data cells having fixed transmission rates and second data cells having variable transmission rates.

Hence it would have been obvious to one skilled in the art prior to applicant's invention to further include the above limitation. In particular, one skilled in the art would have been motivated to make the above modification for the purpose of accepting different types of quality of service and in particular voice and data. As such, *Thorne* teaches the proposed motivation at e.g., Section 2.3.6 on page 1/3.

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As to **claim 15**, see similar rejection to claim 5.

As to **claim 19**, see similar rejection to claim 1.

12. **Claims 9-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,526,060 B1 by *Hughes et al.* ("*Hughes*") in view of "ATM Technology Overview" to *Thorne*.

As to **claim 9**, *Hughes* teaches QoS at e.g., column 5, lines 35-50 and column 6, lines 37-55 teaches quality of service but may not explicitly teach fixed cells or CBR.

Thorne teaches the above limitation at e.g., Section 2.3.6 on page 1/3.

Thus the examiner proposes to modify *Hughes* to further clarify that QoS with respect to the queues further includes first data cells having fixed transmission rates and second data cells having variable transmission rates.

Hence it would have been obvious to one skilled in the art prior to applicant's invention to further include the above limitation. In particular, one skilled in the art would have been motivated to make the above modification for the purpose of accepting different types of quality of service and in particular voice and data. As such, *Thorne* teaches the proposed motivation at e.g., Section 2.3.6 on page 1/3.

As to **claim 10**, *Hughes* teaches selecting cells based on their priority, see e.g., column 5, lines 35-50 and column 6, lines 37-55.

13. **Claims 9-10, 14-15, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,313,454 A by *Bustini et al.* ("*Bustini*") in view of "ATM Technology Overview" to *Thorne*.

As to **claim 9**, *Bustini* teaches QoS at column 6, lines 26-45 and columns 18-19 with respect to priority but may not explicitly teach fixed cells or CBR.

Thorne teaches the above limitation at e.g., Section 2.3.6 on page 1/3.

Thus the examiner proposes to modify *Bustini* to further clarify that QoS with respect to the queues further includes first data cells having fixed transmission rates and second data cells having variable transmission rates.

Hence it would have been obvious to one skilled in the art prior to applicant's invention to further include the above limitation. In particular, one skilled in the art would have been motivated to make the above modification for the purpose of accepting different types of quality of service and in particular voice and data. As such, *Thorne* teaches the proposed motivation at e.g., Section 2.3.6 on page 1/3.

As to **claim 10**, *Bustini* teaches servicing priority at column 6, lines 26-45 and columns 18-19.

As to **claim 14**, see similar rejection to claim 9.

As to **claim 15**, see similar rejection to claim 10.

As to **claim 19**, see similar rejection to claim 9.

Allowable Subject Matter

14. **Claim 23** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123.

The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DWF

Derrick W. Ferris
Examiner
Art Unit 2663

**DERRICK FERRIS
PATENT EXAMINER**

12/24/08